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limit of the Wallaby, and also of the largest of the avian genus Manucodia. Ferguson Island, the largest of the D'Entrecasteaux, probably has 500 square miles, and its highest summit, Kilkerran, is 6000 feet. Goodenough Island has a range of mountains culminating in two peaks not less than 7000 feet high. The people proved quiet and friendly, and their houses, built on raised platforms, with curved roofs, and tapering from the end nearest the village square, are peculiar.

GEOLOGY AND PALÆONTOLOGY.

The American Association for the Advancement of Science.—Numerous valuable papers were contributed to the Geological Section (E) at the late meeting at Toronto. We are indebted to our correspondent, Prof. Joseph F. James, for the following notes on some of them.

Topographic Types of North-Eastern Iowa. By W. J. McGee.—This paper was illustrated by a relief map of the section treated of, which showed the different character of the drainage channels of the district. In the extreme northeast was the dendritic system. In the lower portion the most peculiar feature was that the streams, instead of following the valleys, followed the ridges, and in them had frequently carved deep cañons for themselves. The cause of this was that the glacial period had so filled the valleys with drift deposits that on the retiring of the ice the streams were compelled to seek new channels, and these were easiest found along the ridges.

Glacial Phenomena of Northern Indiana and North-eastern Illinois. By Frank Leverett.—The writer detailed his investigations in the region in question, and mentioned in particular the moraines which he had followed in their windings. He mentioned one moraine which was so obscured that it was only by careful barometeric measurement that its presence could be detected. A profile, however, showed plainly the morainic character, with a long, gradual slope on one side, aud an abrupt one on the opposite. The lobations of some of the moraines were described, and mention made of the very different directions from which the materials were derived, even within a small area.

"*The Attractive Scenery of Our Own Land,*" was the title of a paper by Prof. A. S. Bickmore. In this the author described the scenery of the Northern and Canadian Pacific railways, dwelling in particular upon the beauties of the peaks of the Rocky mountains, with their perpetual snows and living glaciers. He entered an earnest plea for the study of the scenery of this continent, as opposed to that of Europe. In the one case we have Nature in all her freshness, while in the other man's presence has thrown a glamor over the scene.

On certain remarkable new fossil plants from the Erian and Carboniferous, and affinities of the Palæozoic Gymnosperms. By Sir. Wm. Dawson.—This was an interesting paper, in the course of which the author reviewed the main features of living gymnospermous plants and mentioned their affinities with other classes. Mention was made of a remarkable fossil found by R. D. Lacoe, of Pittston, Pa., to which the name *Dictyocordaites Lacoeï* was given. The specimen in question showed certain features which had previously been supposed to belong to several distinct genera, and it was thus the means of uniting them under one name. Various other specimens were mentioned which seemed exactly intermediate between distinct genera. To one of these the name of *Tylodendron* was given. The existence in Palæozoic times of a large series of gymnospermous plants was dwelt upon, and the idea advanced that from the highly developed Gymnosperms of the Palæozoic were developed, on the one hand the Acrogens, and on the other the Phanerogams, while the predominant family of that early time has degenerated into the meagre representation of our modern cycads and conifers. Although not an avowed evolutionist, Sir William has put a powerful weapon into the hands of working biologists by his description of the new intermediate or generalized forms mentioned in his paper.

Mammoth Cave. By H. C. Hovey.—In this paper reference was made to the extent of the cavern, and to the fact that it is in several tiers or galleries, and that these have been cut through in places by the action of water. What appear pits at one level become domes in the one below. Mention was made of the discovery of several new pits, in the vicinity of what is commonly called the "Bottomless" pit. Some other name must be found for this, as its depth has been sounded, and is found to be ninety-five feet. Late explorations have revealed the fact that Scylla, Charybdis, the Bottomless, Covered, and four other pits, are all connected together at the bottom, and are there united into a large hall several hundred feet in length, to which the name of "Harrison's Hall" has been given. The paper was illustrated by a large map and several diagrams of special portions of the cave.

Section of Makoqueta Shales in Iowa. By Joseph F. James.—In this paper mention was made of the locality where the typical exposure is to be found. It is near Lattner's Post-Office, reached from Graf, a station on the Chicago, St. Paul and Kansas City railroad, sixteen miles west of Dubuque. Details of the section were given, and mention made of the fossils found in the shales. A species of Orthoceras is especially abundant, and remarkable for its wonderful state of preservation, many specimens retaining their original pearly nacre. Groptobites were also finely preserved, and very abundant in certain layers. The junction of the shales with the Galena below was mentioned as having been observed.

Geology of Borneo.—Dr. T. Posewitz has published the results of three years' personal explorations in Borneo, and in the second part of his work deals with the geological and physical structure of that large island. There is no uninterrupted central mountain chain, but isolated mountains surmount table-lands which extend northeast to southwest. As far as is known, the Kina Balu mountains, which have a maximum height of 13,698 feet, are the highest. The geological structure is simple. The isolated mountains are slate or schist, penetrated by granite and diorite. Succeeding these are Devonian strata with auriferous veins. Within the last few years Carboniferous strata (mountain limestone) have been found, and are believed to occupy a wide area in north Borneo; and Cretaceous rocks have been found in a single locality in west Borneo. The Tertiary is spread over wide areas, and forms the plateaus through and over which the mountains rise. The older Tertiary includes sandstone, marl and limestone, and the greater part of the coral deposits occur in the sandstone. The older Tertiary strata are often much disturbed and broken by intrusive masses of andesite. Oligocene strata are only known in East Borneo, and include extensive deposits of coal.

Diluvium spreads over wide undulating tracts around the Tertiary hills, and contains the principal sources of the gold and diamonds of the island. There are no evidences of any post-Tertiary volcanic energy.

Geology of Tasmania.—R. M. Johnson, F.L.S., has published a systematic account of the geology of Tasmania, with a sketch map on a scale of fifteen miles to the inch. The oldest formations are in the west and northeast, and consist of crystalline schists, apparently Archæan, with clay slates, quarzites, sand stones and limestones of Cambrian, Ordovician or Silurian age, with small and doubtful evidences of Devonian. Between the two are as of older rocks a tract of great extent, in the centre of the island, is occupied by coal-bearing strata. The lower series of these contains plants of Carboniferous age, but the higher coal-measures yield many plants of Mesozoic affinities. These strata have been invaded by igneous intrusions, and are to a great extent covered by Tertiary beds.

MINERALOGY AND PETROGRAPHY.[1]

Petrographical News.—A new type of rock has been discovered by Mr. Arnold Hague[2] in the Absaroka Range, Wyoming Territory. It was found as a boulder in the gorge of the Ishawooa River. The most striking feature of the rock is the number and size of the grains of fresh olivine scattered through it, the only other macroscopical ingredient being augite. These two minerals lie in a ground-mass composed principally of *leucite* and orthoclase, together with a small amount of plagioclase, magnetite, apatite, and minute flakes of brown mica. The rock is particularly interesting as the third occurrence of a leucite rock in North America. The leucite is partly idiomorphic and partly allotriomorphic. Some of its crystals are isotropic, while others show optical anomalies. A number contain minute augite grains as inclusions, arranged centrally or in a spherical zone about the centre of the crystal. An analysis of the rock reveals a very low percentage of potassium, a percentage so low as to suggest the existence of such conditions during the solidification of the rock as to allow of crystallization in two very distinct stages. The analysis was made by Mr. Whitfield.

SiO_2	TiO_2	Al_2O_3	Fe_2O_3	FeO	MnO	CaO	MgO	Na_2O	K_2O	Cl	P_2O_5	H_2O
47.28	.88	11.56	3.52	5.71	.13	9.20	13.17	2.73	2.17	.18	.59	2.96

——Two new localities for camptonite have been reported from the New England States within the past summer. The first is near Whitehall, Washington Co., N. Y., where Messrs. Kemp and Marsters[3] discovered dykes cutting the Georgia slates. In addition to the usual features of

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[1] Edited by Dr. W. S. Bayley, Colby University, Waterville, Me.

[2] *Amer. Jour. Sci.*, July, 1889, p. 43.

[3] *American Geologist*, Aug. 1889, p. 97.